

ABSTRACT OF THE DISCLOSURE

An electrolyte for a metal-oxygen battery includes a non-aqueous solvent which is characterized in that the solubility of oxygen therein is at least 0.1150 cc O₂/cc of solvent at STP. The electrolyte also includes an electrolyte salt dissolved in the solvent. The solvent may comprise a mixture of materials in which at least 50%, on a weight basis, of the materials have an oxygen solubility of at least 0.1760 cc O₂/cc at STP. Also disclosed is a method for optimizing the composition of an electrolyte for a metal-oxygen battery by selecting the solvent for the electrolyte from those materials which will dissolve the electrolyte salt and which have a solubility for oxygen which is at least 0.1150 cc O₂/cc at STP.